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The Western Shad-bush.

THE genus Amelanchier is a natural one, closely related botanically to Cratægus, from which it differs in its long, strap-shaped petals and principally in the nature of the ovary, which is usually five-celled, each cell being incompletely separated into two chambers by the development from the back of a partial or false division, so that the fruit, which is a little fleshy pome or apple, appears to be ten-celled, each cell containing a seed with a cartilaginous chestnut-brown mucilaginous coat. Frequently, however, there are only five seeds in the fruit, owing to the abortion of one of the two ovules which the ovary contained in each of the original five cells. To its juicy flesh and thin-shelled seeds is due the superiority of the fruit of Amelanchier to that of Cratægus, in which the flesh is dry and mealy, and the stones, which make up a large part of the fruit, are large and thick-walled. In fact, the fruit of the Thorns is barely edible, and, unless the stones are removed, very indigestible.

Amelanchier has not been differentiated into a large number of species, as is the case with many of the genera of the Rose family, to which it belongs, and only five or six species with a number of varieties are distinguished, all of them bearing such a close resemblance to each other that it is not always easy to recognize them or to find stable characters by which to distinguish them. The genus is widely and quite generally distributed, however, through the north temperate zone; it occurs in the northern and temperate parts of eastern and the mountain-region of western North America, in Japan and central China, in Asia Minor, the Caucasus, southern Europe and northern Africa, but is not found in the great mountain-region of central and southern Asia, to which it might naturally have extended. Europe possesses one small shrubby species, which abounds also in north Africa and in Anatolia; a second species inhabits the Orient, and a third is widely distributed in central China and in Japan. This is the Amelanchier Asiatica, which such careful observers as Miquel and Maximowicz considered merely a variety of the arborescent Shad-bush of eastern North America, where there are two species. These are Amelanchier Canadensis, with several well-marked varieties, and the beautiful Amelanchier oligocarpa, a shrub of the extreme north, which, as a garden-plant, is one of the most desirable of all early-flowering North American shrubs.

In the year 1804 a party of United States soldiers, under the leadership of Captains Lewis and Clark, commenced the first overland journey from the shores of the Atlantic to those of the Pacific Ocean; on the waters of the upper Missouri River they were able to eke out their scanty diet with the large and delicious Service-berries, which they found in great profusion along their route. This was the fruit of the western Shad-bush, or Service-tree (Amelanchier alnifolia), which first appears in literature in the history of this famous and important expedition. The specific character of the plant, which was confounded with the species of the eastern states, was not recognized in these early days, and although it was introduced from Oregon into English gardens by David Douglas in 1826, it was not until some years later that Thomas Nuttall, who had found it in the northern Rocky Mountains, gave the western Shad-bush the rather inappropriate name still used to designate it.

Amelanchier alnifolia is usually a low shrub with spreading stems only a few feet high; sometimes it sends up from the ground a cluster of tall thin stems, or occasionally, under exceptionally favorable conditions, it forms a slender tree thirty to forty feet in height, with one straight trunk eight to ten inches in diameter.

In different parts of the country Amelanchier alnifolia varies in a striking manner in the size and color of the leaves and in the amount and color of the pubescence which covers their under-surface while young as well as the shoots. These are generally oval to nearly circular in outline, rounded or rarely acute at the apex, rounded or slightly heart-shaped at the base, and coarsely toothed above the middle; usually they are dark green and membranaceous or slightly coriaceous, although in the dry interior parts of the continent they are much thicker and gray-green on the two surfaces. The leaves vary from an inch to an inch and a half in length and breadth; they are rather inconspicuously veined, and are borne on short slender stalks. The flowers, like those of all the Amelanchiers, are produced in short erect racemes, and are smaller than those of the Shad-bush of the eastern states, the pure white petals varying from a quarter to an inch in length. The fruit ripens in different parts of the country from June to September; it is subglobose, from a half to nearly an inch in diameter, dark blue, or sometimes nearly black, covered with a beautiful glaucous bloom, and very sweet and juicy.

The western Shad-bush grows over an immense territory; at the north it is found in the valley of the Yukon River in latitude 62° 45′; it extends south over nearly all the mountain-ranges of western America, ranging eastward to Colorado and Nebraska and through the Saskatchewan and Manitoba to the western shores of Lake Superior and to the northern peninsula of Michigan, where forms occur which are not always easy to distinguish from varieties of the eastern Amelanchier Canadensis.

In the interior of the continent Amelanchier alnifolia is confined to high elevations, sometimes ascending to 10,000 feet above the level of the ocean, where it occurs near the borders of alpine meadows or covers dry hill-sides with thickets not infrequently hundreds of acres in extent. It is in the valley of the lower Columbia River in rich bottom-land often inundated, or on the small prairies which are common in Washington near the shores of Puget Sound, that the western Shad-bush grows to its greatest size. In such situations it occupies the ground to the exclusion of other shrubs, or is associated with the Oregon Crab-apple, the Hawthorn and the Choke-cherry in dense masses about the margins of the forests of larger trees.

The fruit of the western Shad-bush, like that of all the plants of the genus, is sweet and of excellent quality, as many travelers through the western wilds of North America can bear testimony. Many a party of half-starved explorers and prospectors have been kept alive by Service-berries, which have been always an important source of food-supply to the Indians of the west, who visit every year the localities where the plants are abundant, and gather the fruit for winter use, first crushing it, and then, having dried it spread out on stones or bark, packing it in sacks.

As a plant with which to decorate our gardens Amelanchier alnifolia is less desirable than the larger-flowered and larger-growing eastern Amelanchier Canadensis and its varieties; it is perfectly hardy, however, and, like all Amelanchiers, is easily raised from seed, the seedlings displaying considerable variation in the size and quality of their fruit.

A figure of the flowers and fruit of the western Shad-bush was published in an early number of this journal (vol. i., p. 185). The illustration in the present issue gives an idea of the habit of the plant as it grows under the conditions which most favor its development. It is from a photograph of a cluster of plants growing in gravelly and rather dry soil on a prairie, near Seattle, in Washington, for which we are indebted to Mr. C. V. Piper, of that city.

Water-towers in Massachusetts.

IN another column, Mr. Sylvester Baxter, describing the pleasure-grounds of Wakefield, Massachusetts, alludes to the great architectural beauty of the distant water-tower at Reading, a view of which can be had from the pleasure-grounds at Wakefield.

These water-towers are becoming marked features of the Massachusetts landscape. Every town of any considerable population has its water-works, and as the sources whence water may be drawn by gravity are exhausted, water-towers, or "stand-pipes," have become a necessity. They mark the hill-tops of eastern Massachusetts in every direction and form notable landmarks, but, with very few exceptions, they are not as beautiful as they are conspicuous. They are usually plain cylinders of iron thrust up into the air like enormous steam-boilers, much elongated and set on end, or like very thick, unsharpened lead-pencils, and they disfigure the landscape as a heavy, black perpendicular mark would deface a fine painting. Perhaps there is none more conspicuously ugly than that of Swampscott, the obtrusive presence of which must be very irritating to the summer residents along that beautiful and fashionable shore. Various other suburban communities offend in a hardly less degree. Malden, for instance, has a particularly bad one, unique in these parts, serving both as a tank and stand-pipe, and looking like a gas-holder, perched upon the summit of Wait's Mount, a fine rocky hill rising boldly out of the heart of the city. The offense is the more aggravating because several acres of the top of this hill have been reserved as a pleasure-ground. It is much to the credit of Boston that care has been taken to give architectural character to the several water-towers erected upon prominent elevations in various quarters of the city, the slender, white, minaret-like structure in Roxbury taking precedence in grace and beauty.

All persons of good taste and public spirit should unite in urging upon the local authorities the importance of true proportion, at least, in these structures; something which might be obtained at little or no additional expense. We condemn the Romans for their prosaic utilitarianism, as reflected in their public works. But their aqueducts and bridges had, at least, the merit of a simple grandeur, dignity and true proportion, while, in this age of iron, our useful constructions are apt to be obtrusively ugly.

It would be a wise reform to combine the monumental with the useful in our public works. It is now the exception when either our monuments or our structures of utility are constructed in accordance with sound architectural principles. There are very few out of the thousands of "Soldiers," or "Soldiers and Sailors" monuments that have been erected since the civil war, which, in after years, a cultivated taste will not condemn. The useful and the monumental have, in many instances, been united with gratifying results in memorial halls, libraries, etc., and this custom is happily growing. One of the best forms of a memorial is a public pleasure-ground, and this idea is also obtaining popularity in many directions. There are also a few instances of memorial bridges—a most admirable form of monument.

If, however, either a community, or a beneficent individual, desires to erect an architectural monument, what better basis for such a structure could be found than that of a water-tower? Towers, pure and simple, have little use nowadays, and their erection in connection with public buildings is usually a waste of money which might otherwise be applied to much better advantage. But a water-tower is, in many commodities, an indispensable object. It could be either united with a public building, or it might stand apart in the midst of a public square, like an Italian campanile, or, erected upon a neighboring hill-top—in a park for instance—it would serve as a fine lookout point as well. In erecting monuments, merely as such, the lack of means adequate to the purpose is apt to give them a bare or scrimpy look. A water-tower must, of necessity, have ample proportions, and this fact would assure dignity and impressiveness if it were made the motive for a monument. Those communities which have monuments to erect would therefore do well to expend the money at their disposal for the purpose either to build a monumental water-tower, or, if they already have the misfortune to possess one of the ugly bare cylindrical monstrosities, to turn the fact to account by enclosing it with a suitably designed exterior of masonry—either of stone or brick, according to their means—embellished with suitable decorative work in the way of carving, sculpture and inscriptions. A monument of extraordinary beauty, either simple or elaborate in its decorative features, might thus be obtained, and its place in the esteem of the public, together with the honor accorded to the individual thus commemorated, would be heightened by the fact that the structure was of constant service in distributing throughout the community one of the most indispensable of life-giving elements—the blessing of pure and abundant water.

Civilizing Power of Floriculture.

THE "flower mission" reaches further and is more widespread in its effects than many comprehend. Nothing interests me more than to note the flowers in the windows of the houses of our working-people. Many of the women of such families are able to achieve real wonders in the culture of house and door-yard plants. They will very likely mispronounce—even ludicrously mispronounce—their names, but they surely have both common and artistic sense in manipulating them—more, I often think, than is displayed by many professional florists. What these unconscious artists know is gained by experience and neighborly consultation. It is all practical in the fullest sense of the word, and yet it all seems, and in most cases I am convinced that it is, filled with a very real æstheticism.

These people, though so fond of plant-culture, and no doubt strongly enjoying its successful results, are very generous. They enjoy quite as much the appreciation of their pets by others as they do the progress of their daily work in caring for their window-gardens or small yard borders. There is never a church meeting, fair or Sunday-school celebration to which they do not freely contribute of their floral stores; and in a long experience as a judge at city and rural flower-shows, I have never noted the existence of a keener appreciation of intelligent opinion upon the comparative merits of choice specimens of cut flowers or pot-plants.

Since the advent of the Tuberous Begonias, and the great awakening of interest in Cactus-culture, these village and suburban window-gardens have taken on a new interest for me. It is a constant pleasure to observe the houses as I pass, in winter and summer alike, and to notice the entrance of one

novelty after another. I live near a "junction village," where many mechanics and train-hands have their houses, and I am very sure that the men of these families keep their eyes open to the advent, in the cities whither they daily ply, of new plants, odd or beautiful, and secure specimens whenever the price is within their means. So far as I can learn, very few of these lovers of flowers buy through the mails or obtain their stock directly from commercial gardens or greenhouses. They are all expert at "rooting slips," and know whence to take them without disfiguring the stock-plant. With Begonias they quite understand leaf-propagation, and are expert in a rude way in the composition of potting-earth. The window-pots are protected from the sun, and by sedulous care unevenness of growth is obviated. But I notice that when one of these flower-loving families becomes able to build a cottage of its own, a corner bay-window is pretty sure to be provided for in its plan.

This love of flowers, of which I have been writing, seems to have something communal in its nature or origin, and does not in any notable degree extend far into the country round about. Only a few farmers' wives seem to care much for, or have any remarkable skill in, window or open-air floriculture. The truth probably is, not that they do not like flowers, but that they have much less time to attend to them. As for out-of-door flower-gardens, loose cattle, pigs, dogs and fowls make such a thing a matter of too strenuous policing to be practicable. Indeed, these dangers greatly limit and discourage the establishment of good kitchen-gardens, which are quite rare on the farms of interior New England.

I happen to know, however, of a flower-garden, the existence and success of which witnesses to the triumph which attends upon stubborn perseverance. It is the work of a farmer's wife and dairywoman who has her hands full of work and whose butter brings the top of the market. Her husband's farm borders on a cross-road with a narrow and not much-frequented track. Like all other roads, however, it is laid out three rods wide, leaving a broad grassy or weedy border. Fences on farms are now a thing of the past in the section referred to, except for the enclosure of pastures; and the road-sides are either cultivated or grassed to the edge of the wheel-track. In many places, at this time of the year, one may ride considerable distances along roads where the hubs of the wheels must brush the oats, rye or other grain in turning out to pass another vehicle. One of these road-sides close by an old homestead had thus been brought under cultivation in Potatoes, and a strip near the buildings was taken by the farmer's wife for a "posy garden." I have seen her working in it a long summer evening until it had become too dark to note the time by a watch. It is about one rod wide and five or six rods long, and I think it would puzzle any one to name any common flowering plant in cultivation that is not to be found there. There is not much apparent order or system in this garden, but it has become so famous that many driving out from the village go out of the way to visit it; and this indefatigable woman is deriving quite a neat income from the plants and flowers which she is called upon to supply for by-passers. She says it pays her much better than the dairy, which is the principal object of her daily care. It certainly confirms the truth of the adage, that "where there is a will, there is a way."

Newport, Vt. *T. H. Hoskins.*

The Lakeside Pleasure-ground at Wakefield, Massachusetts.

WHEN casually discussing the relation of the various lakes in the Boston metropolitan district to the question of public pleasure-grounds, in my account of a bicycle trip to the Waverley Oaks, I alluded to Lake Quannapowit, in the town of Wakefield, as one of the few examples of anything like an adequate dealing with the opportunity presented. That it has been done so satisfactorily in this case is mainly owing, I believe, to the public spirit of a wealthy citizen and to the fortunate location of an important county highway. The town of Wakefield, formerly South Reading, was named in honor of the late Cyrus Wakefield, the founder of the leading industry of the place—the manufacture of rattan goods. Mr. Wakefield did much to improve the town, then it adopted his name. He gave it a large and costly town-hall, and was chiefly instrumental in laying out and improving one of the most charming pieces of public ground possessed by a town of its size, numbering 6,982 inhabitants by the census of 1890.

The main county highway from Boston to Lowell, by way of Malden bridge, becomes in Wakefield, as in most of the places through which it passes, the main street of the town, the most populous part of which is pleasantly situated between two lakes, something like a mile apart; Crystal Lake, the smaller of these, lies to the southward of the village against a pleasant range of rocky and wooded hills. It presents a charming appearance from both the Boston and Maine Railroad and the main highway; the railway runs between the lake and the street, which is considerably above the water-level and commands some beautiful glimpses between the intervening houses—a fact which it would be well to take advantage of by providing an open space from which a view of the water might always be obtained. A most attractive feature of this lake is a pretty little rocky islet, covered with trees.

Lake Quannapowit lies at the other end of the village, and the common is designed with reference to this fact. As it approaches the lake, Main Street broadens considerably and gives opportunity for the beginning of the public ground, which takes the shape of a large triangle with its base on the lake-shore. The first section is a wedge-shaped piece of ground containing a few hundred square feet. This is walled about with rough rock about eighteen inches high, I should say, entirely mantled with a luxuriant growth of Japanese Ampelopsis. At the broad end, toward the lake, is a large rock-rimmed basin, screened on the north by a high, irregular-shaped wall of rough rock, rising to a height of perhaps four or five yards. At the centre of this wall is a handsome Elm. A rich and tangled growth of Bittersweet clambers over the wall and up into the tree, thus uniting it with the structure of a fountain, which, rising from the basin, sends a fine spray over the adjacent grass and foliage, keeping it a rich full green. The only questionable feature about this delightful bit of ground is the formal flower-bed which occupies the centre of the raised grass-plot within the triangle with some garish Geraniums and foliage-plants—altogether too artificial in appearance for the unconventional character of the design. A group of flowering shrubbery would be better.

Beyond the road which cuts off this triangle from the continuation of the public ground is the old-fashioned New England Common, here a large grassy space widening out toward the lake, tree-shaded, and bordered by a low fence of simple design. This piece of ground could, in its simple dignity, hardly be improved. The common, again, is separated from the grounds bordering the lake by a street, upon which, facing the town and cornering upon the lakeside grounds, is a large and handsome new church of gray stone—a feature that greatly helps the scene with its picturesquely rich and stately architectural element.

The grounds on the lake slope gently down from the street to the shore. Very appropriately this area is simply a broad stretch of lawn, with no trees to interrupt the view of the water, to which it thus carries the eye by the pleasing transition of a broad sweep of greensward. Fortunately, the town has had the good sense and good taste to remove a very ugly brick fire-engine house that, until recently, stood here. An ornate music-pavilion is now the only structure upon the grounds; it offers no obstruction to the view, which it only serves to accent.

This attractive scene gives Wakefield its most distinctive character. The lake, thus cherished and beautified, plays an unusually important part in the life of the place. There is bathing in its waters; boating, canoeing and sailing on its surface in the summer; skating and ice-boating in the winter, besides band concerts, promenading and driving on its shores.

The view up the lake deserves rank among the notable park scenes in the country. There is a vista of something like two miles of sparkling blue water to the northward, with a shore-line just irregular enough to prevent monotony, but without diminishing the effect of largeness—the water-area showing for the full value of its length and breadth. White-sailed yachts skim like swallows over the surface, and row-boats and canoes glide gracefully about.

Beyond the end of the lake, on the upland to the left, cluster the roofs and spires of Reading, the parent town of Wakefield, and, seemingly from the midst of the place, rises a great water-tower of a decided architectural character. In the distance, from across the water, its high and massive shaft with a finely proportioned roof, tapering like that of a mediæval turret, say at Nuremberg, is most impressive, and dominates the surrounding edifices of the town with something of the grace and majesty of a great cathedral tower in an Old World city.

The main street, or county road, on its way northward to Reading, turns to the right and follows the easterly shore of the lake. Between the street and the water the lawn-like character of the grounds continues for some distance, giving to the margin of the water a refined touch in keeping with its surroundings. There is, however, too great a uniformity in

this smooth expanse of lawn extending along the shore. The central space should, of course, be kept smooth and broad, and as it is, the plain simplicity of the whole is vastly preferable to the tawdry fussiness of floral bedding effects. Here, however, by the massing of varieties of flowering shrubbery on both the right and left of the lakeside section, and on the strip between the road and the water, a pleasing effect could be produced something after that of the Fenside, on the Back Bay Fens. The expense of caring for so much lawn would also be saved. In carrying out a work of this sort it would be well, of course, to obtain the advice of a landscape-architect.

A number of pleasant-looking places, including several simple, old-fashioned-looking houses with ample grounds, stand on the street bordering the lake. On the water-side of the road there are one or two boat-houses, and a little boat-landing is seen now and then. As the road continues it loses its suburban character and becomes distinctively rural; the strip of ground between the highway and the water is diminished to a few feet. There is a good fringe of trees and wild shrubbery along the margin. It is said to be the intention to widen the street gradually and, by filling in, make a broader strip of ground along the water-side. If this should be done it would be well to retain the wild shrubbery, emphasizing, however, its present character by planting all the native species natural to such a habitat.

It would also be well to secure the westerly margin of the lake, so far as possible. On that side, at a point near the town, there is a cemetery with its white marble gravestones and monuments gleaming under the trees—less offensive than most places of the kind. Looking back toward the town the view at that end of the lake is picturesquely attractive, with the fine expanse of public grounds and the handsome great stone church. At that end is the principal landing-place, and a little fleet of sail-boats lies moored off shore. A huge ice-house, with its galleries painted dark brown, stands near by, and is not an unpleasing example of utilitarian construction. Along the westerly shore, here and there, are other great ice-houses like barracks; some of them are brilliantly whitewashed and are altogether too prominent.

The road, in its course beside the lake, commands a succession of fine views over the water. Near the northern end of the lake a pretty brook comes gurgling out through a thicket, the modest beginning of the Saugus River. Beyond is a little beach by the roadside, with a watering-place for horses and cattle.

I must note a pretty effect that caught my eye at a railway crossing on my way home by bicycle. The county highway runs very near the Boston and Maine Railroad. At a crossing near the southerly limits of the town of Wakefield I was struck by the very graceful effect of a growth of Virginia Creeper clambering over the sentry-box-like little house for the flagman, and thence up the tall post bearing the usual sign of "Look out for the engine while the bell rings!" converting it into a really beautiful feature by the simple sweep of the carelessly drooping sprays of foliage. Such effects are very common at railway crossings in Germany, but are rare enough in this country, and especially on the Boston and Maine Railroad.

Boston. *Sylvester Baxter.*

Late Summer Flowers on the Prairie.

THOUGH many species of Allium are cultivated for food, some have found a place in the flower-garden. A wild species common on the prairies may be classed with the ornamental kinds, especially when seen in masses. In late summer the Nodding Wild Onion (Allium cernuum) decks many fields with showy flowers. The triangular scape, a foot or two high, curves abruptly near the top, and carries a roundish umbel of thirty to fifty flowers in a nodding position, which has given it both its common and botanical name. They are mostly rose-colored, but pink and white kinds are numerous. This imparts to a field a variegated appearance, bright on the whole, since the reddish hues prevail. They are often in such quantities and grow so thickly that little else is noticeable where they stand. They are not easily exterminated, and maintain their place where most of the native plants have disappeared, still flourishing on the commons or in vacant lots in the more thinly peopled sections of the city and in the suburbs. They are common in pastures where the feet of cattle have crushed out the life of less stubborn plants, or where the prairie grass has been replaced by cultivated kinds. In some localities they have evidently increased under such treatment, and taken the place of those which have yielded. Their bulbous root serves them admirably in this respect, and bears much rough treatment before its vitality is destroyed.

Sometimes the Spiked Liatris (L. spicata) shares the ground with it, or is seen apart in other masses quite as extensive. In either case it forms a striking picture. With a long cylindrical spike of rose-purple flowers lifted a foot or two above the Allium, the combined effect of the two when growing together is very fine. Nearer the ground are seen the lighter-colored, roundish flower-clusters of the Allium, while over them stand the brighter, wand-like clusters of the Liatris. Though the leaves of the Liatris are very numerous, they are not long enough near the upper portion of the stem to seriously hide the flowers of its humbler companion, but being close and very narrow often furnish them with a fringe-like setting. The Liatris also has a thick, solid root or corm, and retains its hold quite well upon its native soil, though disappearing sooner than the Wild Onion from fields where the indigenous grasses have been supplanted by foreign species.

Another showy plant of a different habit, Hibiscus Moscheutos, the Swamp Rose Mallow, is in bloom at this season, and lasts till September. Though common in brackish marshes by the sea, it is much less familiar to those dwelling at a distance from tide-water. It is found in the swamps and by shallow ponds near the southern end of Lake Michigan. The rose-colored flowers, expanding five or six inches, exceed in size any flowers here except the Water-lily and the Yellow Nelumbo. The branching stems are from four to eight feet high, and are abundantly provided with handsome dark green leaves, which are soft and velvety. The large buds are as attractive as the flowers, excelling them in one respect, since the flowers are of short duration, while the buds are prominent for several days. In this region the Rose Mallow does not usually grow in water, but on sandy and muddy shores, which are overflowed in the wet season. It does well by the drier borders of the ponds, and remains in localities somewhat remote from them, where the swampy lands have been drained. It may be found interspersed with Cornel-bushes, or with a background of low trees and climbing vines. It readily takes to cultivation, and is a fine ornament for the garden.

Englewood, Chicago. *E. J. Hill.*

New or Little-known Plants.

Cypripedium Chamberlainianum.

THIS new Cypripedium, which was the occasion of considerable comment among Orchid-growers when it was first announced for sale early in the present year, was imported from New Guinea by Messrs. F. Sander & Co. It is a beautiful species, besides being so distinct that it was described originally as belonging to a totally new section, and it really has few characters in common with C. Rothschildianum and C. Stonei, although it is classified in the same group with them. The plant has been described in former numbers of Garden and Forest, and our present purpose is merely to invite attention to the illustration (see page 413) from a photograph kindly sent us by Mr. Robert M. Grey of a specimen which flowered something more than a month ago for the first time in America, so far as we are aware, in the collection of H. Graves, Esq., Orange, New Jersey. The species is robust and very floriferous, and native specimens are said to produce from twelve to twenty flowers. The plant from which our illustration was taken was weak, but it produced six flowers. The dorsal sepal is primrose-yellow, veined and speckled with vinous brown. The petals are much twisted and of the same color. The lip is much inflated, a bright rose-purple and primrose about the opening and base. Altogether, C. Chamberlainianum seems to justify all the enthusiasm which its introduction kindled.

New Orchids.

Disa incarnata, Lindl.—After being known for upward of half a century, this Madagascar species has at last been introduced to cultivation, and flowered with Messrs. W. L. Lewis & Co., of Southgate. The flowers are of a bright cinnibar-orange, except the dorsal sepal, which is deep yellow, with bright red spots.—*Gardeners' Chronicle*, May 14th, pp. 618, 619, fig. 88.

Phalænopsis × Amphitrite, Kranzlin.—A pretty hybrid raised between P. Stuartiana and P. Sanderiana, the latter being the pollen parent. It bears a considerable re-

semblance to P. Sanderiana, modified in the direction of the other parent. It is not stated where it originated.—*Gardeners' Chronicle*, May 14th, p. 618.

CŒLOGYNE CUPREA, Kranzlin.—A species allied to C. speciosa, Lindl., but with smaller glabrous flowers, which are copper-colored. It flowered with Monsieur Wendland at Herrenhausen from plants imported by Messrs. F. Sander & Co., of St. Albans.—*Gardeners' Chronicle*, May 14th, p 619.

ONCIDIUM GRAVESIANUM, Rolfe.—An elegant Oncidium allied to O. crispum and O. prætextum, but with much narrower petals, which impart a very distinctive appearance to the plant. It bears large branching panicles of golden yellow and brown flowers two inches in diameter. It was imported from Pernambuco by Messrs. F. Sander & Co., of St. Albans, and received an award of merit from the Royal Horticultural Society on April 19th last.—*Gardeners' Chronicle*, May 21st, pp. 650, 651, fig. 94.

CYPRIPEDIUM × EVENOR, Hort.—A hybrid raised from C. Argus crossed with the pollen of C. bellatulum, with foliage much like the former, and a flower resembling that of C. × Marshallianum. It was exhibited by Messrs. James Veitch & Sons, of Chelsea, at a meeting of the Royal Horticultural Society on May 17th last, and received an award of merit. — *Gardeners' Chronicle*, May 21st, p. 664.

CYPRIPEDIUM × EURYLOCHUS, Hort. — A hybrid raised from C. ciliolare crossed with the pollen of C. hirsutissimum. The petals are elongated and deflected, rose at the tips, greenish at the base, spotted with purple, the upper sepal and lip being greenish, shaded and spotted with purple. It was exhibited by Messrs. James Veitch & Sons at a meeting of the Royal Horticultural Society on May 17th last.—*Gardeners' Chronicle*, May 21st, p. 664.

DENDROBIUM × NESTOR, O'Brien.—A hybrid raised from D. Parishii crossed with the pollen of D. superbum, and somewhat like a smaller edition of the latter. The flowers are three inches in diameter, the sepals and petals white, tinged with rosy lilac, and the lip with a large rosy purple blotch on either side. It was raised in the collection of C. Winn, Esq., of Birmingham.—*Gardeners' Chronicle*, June 4th, p. 718.

LISSOCHILUS GRÆFEI, Kranzlin.—A species allied to L. streptopetalus, Lindl., with an erect raceme of flowers, the sepals green, suffused with purple-brown, the petals pale yellow outside, brighter in front, and the lip pale yellow, with violet-colored side lobes. It flowered in the stove of Dr. Hugo Græfe, of Berlin.—*Gardeners' Chronicle*, June 11th, p. 749.

MASDEVALLIA × CASSIOPE, Hort.—A charming little hybrid raised from M. triangularis crossed with the pollen of M. Harryana. It is like an enlarged and improved form of the former, with the reflexed dorsal sepal and a considerable share of the brilliant coloration of the latter. It was raised in the collection of Captain Hincks, of Thirsk, Yorkshire.—*Gardeners' Chronicle*, June 11th, p. 749.

CYPRIPEDIUM × CHRYSOCOMES, Hort.—A hybrid said to have been obtained by crossing C. cordatum roseum and C. × conchiferum. The flowers are very large, and light yellowish green, with some brown spots on the side lobes of the lip. It flowered in the collection of R. H. Measures, Esq., of Streatham.—*Gardeners' Chronicle*, June 18th, p. 781.

Kew. *R. A. Rolfe.*

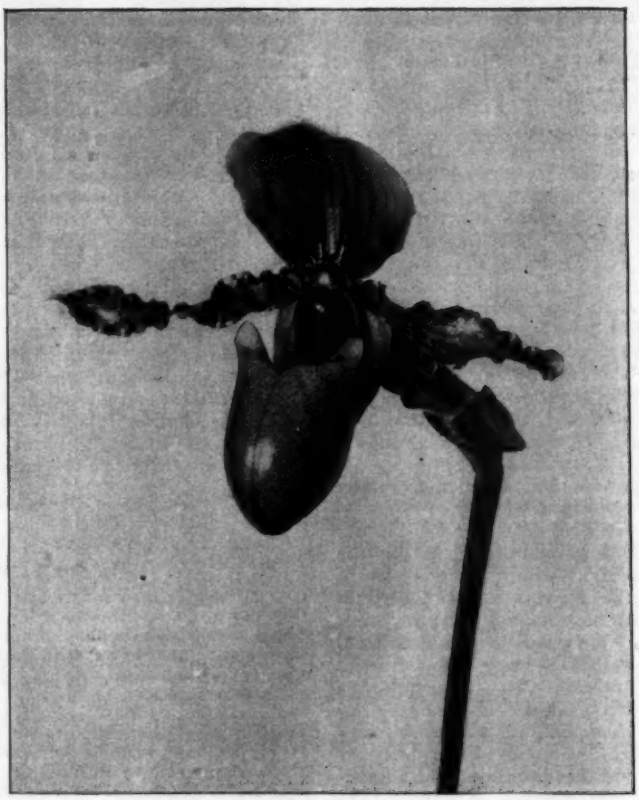

Fig. 68.—Cypripedium Chamberlainianum.—See page 412.

Foreign Correspondence.

London Letter.

FUCHSIAS.—An interesting lecture on Garden Fuchsias was read last week at the meeting of the Royal Horticultural Society by Mr. George Fry, the veteran raiser of many of the best varieties, and a well-known cultivator of them for the last sixty years. The early history of the Fuchsia as a garden-plant is now well known, how it was introduced a century ago (1788) to London from Chili by a sailor, who gave it to his mother, who grew it in her cottage window at Limehouse, where it attracted the attention of a passer-by, and ultimately was purchased by the Messrs. Lee, of Hammersmith, the Veitchs of that period, for £80. Messrs. Lee's plant was named F. coccinea, by Aiton. Numerous seedlings were raised from it, and variety thus obtained, but it was not until the introduction in 1830 of a second species, namely, F. fulgens, that hybrids were possible. In 1855, Messrs. Henderson, of St. John's Wood, distributed the first of the varieties with white corollas, raised by a Mr. Storrey, of Newton Abbot, who unfortunately died soon afterward, without recording the origin of this new break. More recently, other species have been blended with the varieties previously raised, and there are now numerous distinct kinds, one might say hundreds, many of them of exceeding beauty.

It is difficult to account for the want of popularity of the Fuchsia in England at the present time. There are certainly few gardens in which the genus is not represented, but one scarcely ever meets with a collection of Fuchsias as we do of Chrysanthemums, Pelargoniums, etc. And yet, no plants are more easily managed, none more elegant or more beautiful when well grown and flowered. I have a vase of the blooms before me as I write, a few shoots a foot long, thickly clothed with drooping crimson and white flowers, which have been in the room a week and are still fresh. It would be difficult to find any flowers better suited for vases than Fuchsias. They are not good nurserymen's plants, as they are so brittle that they pack badly, and the flowers are easily shaken off. Still, in the greenhouse, in the border, or even as wall-plants in the open air, they must always rank among the most decora-

tive of summer-flowering plants. In the conservatory at Kew, Fuchsias are grown as climbers; they are planted in a border below the side stages, and the stems are trained up and below the rafters of the roof, from whence the profusely flowered shoots hang in great abundance and have a very pretty effect. In the Temperate House the Fuchsias are trained to tall stakes twelve feet high, and in the summer they form narrow pyramids of bloom. Of course, the hardy kinds are also employed for summer bedding, a purpose for which when used with a little judgment and combined with suitable companions they are exceptionally well adapted.

Mr. Fry has grown perfect pyramidal specimens of the best kinds as high as fourteen feet. He recommends the sowing of the seeds, which are produced abundantly, much more than is at present practiced, as with ordinary care the plants will bloom when only six months old, and while all, or nearly all, the seedlings will be worth growing, variety, and probably some of superior quality, may be in this way secured. The arrangement of the stamens and pistil in the flowers of Fuchsia renders their cross-fertilization easy. There are a considerable number of species of Fuchsia which, in the hands of the skillful hybridizer, would probably yield good results in the shape of new varieties. Such species are F. triphylla, F. decumbens, F. syringæflora and F. dependens, none of which, so far as I know, have been bred from.

The cultural details given by Mr. Fry were pretty much the same as are known to all who have grown Fuchsias. He recommends shade for the plants when grown under glass, plenty of ventilation, plenty of water in the growing season, and a range of temperature from fifty to seventy-five degrees.

Mr. Fry's ambition had been to raise a Fuchsia with pure white flowers, but in this he has been forestalled by Messrs. Cocker, of Aberdeen, who raised a few years ago Countess of Aberdeen, which is almost wholly pure white, and is a very beautiful variety. There is a good collection of garden Fuchsias in the gardens of the Royal Horticultural Society at Chiswick, and at Kew there are altogether thirty-six true species under cultivation.

New Plants.—The following obtained certificates at the last meeting of the Royal Horticultural Society:

Lælia-Cattleya Ingramii, raised by Mr. Bond, gardener to Mr. C. L. Ingram, of Godalming, by crossing L. Dayana with Cattleya aurea. The plant, though small, was of promising appearance, and the flowers showed distinct traces of the characters of both parents, the Cattleya being most evident in the labellum, which was large and colored deep crimson; the sepals and petals were colored rose. Cypripedium caudatum, Luxembourg var. This was sent by Monsieur Godefroy-Lebeuf, of Paris. It is a very superb variety of a very handsome species, the flowers being large, with broad sepals, long tails, and the color a deeper shade of yellow than in the type, the markings of the labellum, etc., being as usual in this species. Calanthe Sanderiana, from the St. Albans nurseries, is a new species of considerable interest lately introduced from New Guinea. It belongs to the evergreen section of the genus, and resembles C. veratrifolia in habit, but the flowers are larger, with a peculiarly thick spur, and the color is mauve on the sepals and petals, crimson-maroon on the labellum. Lælia Oweniana, also from Messrs. F. Sander & Co., is a hybrid between L. Dayana and L. xantheria, in which the flowers are like those of the first-named parent, the sepals and petals white, the lip deep maroon in front, with a yellow blotch in the throat and a white disk-like area on the middle of the front lobe.

Sarracenia Farnhami, a hybrid between S. Drummondii and S. rubra, is another pretty addition to the cultivated varieties of Side-saddle plants. It has medium-sized erect pitchers, green in the lower half, crimson toward the apex, and prettily tessellated with greenish white and spotted. It was exhibited by the raiser, Mr. Farnham, of Loughborough.

The following Carnations were submitted to the committee as new, and obtained certificates: The Moucher (yellow), Old Coin (light brown, yellow and crimson), Salamander (rose), King of Scarlets (a very handsome full-flowered glowing red variety), Acme (yellow, with rose flakes), Duchess of Sutherland (Picotee, white, with rose margins), Nellie Bath (Picotee, yellow, with deep crimson edges), Mrs. A. Barrett (Picotee, yellow, heavily edged with rose. These were exhibited by Messrs. C. Turner & Sons, Slough, who have long held a foremost position among the raisers and cultivators of Carnations.

Mr. Rivers, of Sawbridgeworth, showed his new cherry, Emperor Francis, which was awarded a first-class certificate on account of the great size and rich flavor of its bright red fruits. At the previous meeting Mr. Rivers exhibited a collection of his best varieties of cherries, peaches, apricots and plums, which had been grown in his famous orchard-houses, and which astonished those who had not seen to how large a size these fruits can be grown under glass in England. He also obtained a certificate for a new plum named Late Transparent Gage, and which is remarkable for firmness of flesh, lusciousness and lateness, ripening at the end of August.

Buddleia Colvillei.—Mr. Gumbleton, of Cork, has been the first to flower this beautiful Himalayan shrub, specimens of the flowers having lately been forwarded by him to Kew. There is also a figure prepared from a specimen from the same source in the *Gardeners' Chronicle* this week. B. Colvillei was named and described by Hooker in his *Illustrations of Himalayan Plants*, published in 1855. He found it on the Sikkim Himalaya at an elevation of from 9,000 to 12,000 feet, where it forms a large shrub fifteen or twenty feet high, with lanceolate-crenate leaves six inches long, and large erect terminal panicles of crimson campanulate flowers an inch across. It is hardy in Mr. Gumbleton's garden, which is, however, favorably situated. From the altitude at which the plant is found it would, however, be safe to infer that it will prove as hardy in England as some of the Sikkim Rhododendrons which are found at the same altitude and are hardy here. I believe B. Colvillei will prove to be a good garden-shrub.

London. *W. Watson.*

Cultural Department.

Some New Pears.

SOME new Pears are fruiting here, the first time this season, and notes upon them will be more interesting now than when the season is past. Some varieties prove themselves worthless in our region with their first fruits, while others are equally pronounced in the opposite direction. I find the greatest differences of opinion among individuals upon the quality and value of different pears. The Kieffer Pear is condemned as emphatically as it is praised throughout Pennsylvania, yet the points in its favor are so eminently good that it will win in its fight for a place in our orchards. As a market pear and for canning, I have only the warmest praise for the Kieffer as I know it here.

These notes on Pears were prompted by a very remarkable fact concerning the Lawson Pear. From stout, healthy trees, six years from planting, the first crop of fruit was set and ripened this summer. A more beautiful lot of pears was never seen, but not one out of the whole yield of two pecks contained seeds! The core was very much contracted and spongy. This seems to be a feature of the variety, as there is nothing abnormal to cause it temporarily. The trees are in the best state of health, and all the fruits are as near perfection as a summer pear can be. The Lawson deserves considerable attention as it is a very good early pear. The fruit is above medium size, broadly pyriform; skin, waxen lemon-yellow, with many green and brown dots, richly colored with bright crimson or red in the sun. The stalk is of medium thickness and length inserted at one side at an inclination, with a lip of flesh above and a depression on the under side; the calyx is partly closed in an open, even basin. The flesh is white, not very juicy, slightly granular, with a somewhat sweet, highly perfumed flavor, without seeds; it ripens from August 1st to August 20th. This pear will not keep very long after ripening as it softens at the core; this softening is most sudden in fruit

left too long on the trees. The fruit should be picked fully ten days before ripening. The points that will recommend this pear most strongly are size, color, firmness and fragrance.

To find if the seedless nature of this pear was known, I wrote to Wm. Parry, of New Jersey, who offers this variety. In reply he wrote: "A number of trees have fruited this summer and created a very good impression. We had not noticed that they were seedless, and cannot say whether ours were so or not, as our crop is now all gone."

The Early Harvest is another new Pear, ripening a week later than the Lawson. If it gives no better results elsewhere than it has given here, it would be better to abandon it at once. This is described in Parry's catalogue as "very firm, can be shaken from the tree like walnuts, packed and shipped to the market, ripening on the way and coloring up handsomely." All of which is quite true, but disappointment follows. The fruit is very firm even when fully ripe, so much so that the flesh is tough, and in all the fruits that passed under my observation the centres were soft through decay, and the taint of rottenness affected the entire fruit before even the color of ripeness appeared. Whether picked green or ripe, the interior behavior was the same. The quality of the pear in flavor and substance is very inferior.

Other varieties ripening later yielded their first fair setting of fruit in 1891, and show a good crop again this year. These are the Cocklin, Garber and Mikado, all of them of Sand Pear parentage; ripe in October and November. It is not probable that any of these will ever be considered fine for dessert, because of a certain coarseness combined with a lack of sweetness. They are all three to be classed with Le Conte in quality, and therefore not suited to the north.

State College, Pa. *Geo. C. Butz.*

Fig. 69.—The Shad-bush (Amelanchier alnifolia) in Washington.—See page 409.

The Wild Garden in August.—II.

THE Purple Cone-flower (Echinacea purpurea) is very distinct and beautiful. Ample testimony of its attractiveness may be found in the fact that it was the second plant selected by the conductors of the *Botanical Magazine* for illustration in their great work. Although thus prominently brought to public notice so many years ago, it is still comparatively rare in cultivation; but it remains, nevertheless, one of the best plants of its class to be found in garden catalogues. The stems are about four feet high, the lower portion furnished with dark green ovate-lanceolate leaves, terminating in large flowers, the purplish disks of which are prominent and cone-like—hence the popular name—and the drooping rose-purple rays about two inches long. It likes a good free soil, in which it makes vigorous growth, and is easily increased from seeds or by division of the plants.

Some of the Horse-mints, Monardas, notably M. didyma, commonly called Bee Balm, or Oswego Tea, and M. fistulosa, otherwise known as Wild Bergamot, are usually full of flowers at this time of the year, lasting, indeed, well into September; but, owing to a lack of moisture in July, our plants are not as fine as we have had them in past seasons. The good qualities of the plants, however, are still sufficiently manifest to elicit a word of commendation. They are fragrant perennials, from three to four feet high, and of erect habit. The flowers are borne in whorls at the extremity of the stem, and they are of an intense scarlet color in M. didyma, while those of M. fistulosa are light purple. There are a few other species, but those mentioned are the best of the group. Both plants make satisfactory progress in ordinary soil, but, if possible, they should be sheltered from the direct rays of the sun.

There is no prettier sight in the garden at the present time than that afforded by a clump of the Flowering Spurge, Euphorbia corollata, growing strongly on the steep bank of a shallow pond. But this plant is very deceptive in a botanical sense, for what at a first glance seems to be the flower is only a series of bracts arranged around the real flower in the form of a calyx or corolla. The simple stem ascends to a height of about three feet, and is well clad with pale green, oblong leaves. The bracts are pure white, each cluster of five having the appearance of a spreading flower one-fourth of an inch in diameter, and these floral appendages are borne in immense numbers at the top of the stem, the inflorescence taking the form of a compound whorled umbel.

The Cardinal-flower, Lobelia cardinalis, is more at home on the lower ground hard by, where its erect racemes of glowing scarlet flowers have been a dazzling feature of the place for several weeks past, and where they will continue a brilliant attraction for some time to come. The blue flowers of L. syphilitica, the Great Lobelia, are quite as beautiful as those of its red-flowered relative, though not so lustrous. The plants resemble each other closely in habit and requirements, but L. syphilitica blooms later, the earliest flowers appearing

about the first week of August. There are white-flowered forms of these two species, which, while interesting as varieties, are not nearly so decorative as their original types. These Lobelias grow best in moist soil, and they may be quickly propagated by any of the methods commonly pursued in the case of herbaceous perennials.

Liatris spicata is almost over, its career having been considerably shortened by the dry, hot weather. It is from two to three feet high, the numerous stems a trifle stiff. The habit is neat and compact, and the showy purplish flowers are freely disposed on the upper portion of each stem. This plant is most effective when grown in large patches, and it delights in free exposure to sunshine, and in soil of good quality. The same may be said of the Wild Senna, Cassia Marilandica, a most excellent plant, which flowered all through July and is still in full bloom. The stems of this Cassia are three or four feet high, erect, though slender, bearing alternate, pinnate leaves, and short axillary racemes of nearly regular, golden yellow flowers, the anthers of which are quite black, adding much to their beauty. The racemes are generally densely clustered at the stem, and the plant is best propagated from seeds.

The long racemes of purple Pea-shaped flowers produced by Desmodium Canadense are quite pretty, but the plant is large and spreads rapidly, requiring a great deal of space for its full development. Not so with the Missouri Evening Primrose (Œnothera Missouriensis), which has been producing its enormous yellow flowers with great freedom since the latter part of June. It is seldom more than a foot high, the stems having a tendency to spread by courting the ground.

The various kinds of Coreopsis (Tickseed) make a lively show of color, chiefly bright yellows and rich browns. The plants vary in height from one to four feet, and the taller sorts require the support of stakes. C. lanceolata, C. grandiflora and C. tinctoria are the best species. The latter is an annual, but its self-sown seeds afford a generous supply of plants. Centaurea Americana is another desirable annual. It is about three feet high, the stems bearing handsome purple flowers, four inches in diameter, at the summit. The plants should be raised under cover in spring, and transferred to the open any time after the middle of June. Eupatorium purpereum, with reddish purple flowers, and E. perfoliatum, in which the inflorescence is whitish, are blooming profusely. They form ornamental groups from three to five feet high.

Cambridge, Mass. *M. Barker.*

Some Little-known Annuals.

THE annual Cupheas are best represented by C. lanceolata and C. silenoides, plants of considerable merit, though not often to be seen outside of botanical gardens. They are worthy of a more extended use. The stems of each are from twelve to eighteen inches high, and bear large quantities of flowers during July, August and September. Those of C. lanceolata have two large, rich purple segments behind, and four smaller ones of paler color in front. The flowers of C. silenoides are very similar, except that all the divisions, large and small, are of the same dark purple color, the larger ones having margins of a lighter shade. Both plants are natives of Mexico, and they would probably repay some efforts in the way of hybridizing.

Emilia sagittata, better known as Cacalia coccinea, has been too much neglected. It belongs to the natural order Compositæ, and was introduced from the West Indies in 1799. The plant is of erect growth, about two feet high, and the stems and branches terminate with from three to six flower-heads of bright orange-scarlet color, and about half an inch in diameter. It blooms freely throughout the summer, and is most effective in masses.

The intense blue flowers of Delphinium consolida, borne in racemes from six to nine inches long, are very charming, and even in the driest season the plants bloom with surprising persistence. The stems are about two feet high, and fairly well branched toward the top. The leaves are deep green, and, being finely divided, give the plant a beautiful feathery appearance. D. consolida occurs freely in Europe, and was at one time highly esteemed in gardens abroad. The improved forms of perennial Delphiniums which have been produced in recent years were so detrimental to its popularity, however, that it is now rarely seen in cultivation; but it is slowly regaining its former position. There are many varieties, single, double and semi-double, in which the colors range through various shades and mixtures of blue, pink and white.

Trachymene cœrulea, sometimes called Didiscus cœruleus, is a free-branching plant about eighteen inches or two feet high. The leaves are not imposing, but the compact, somewhat convex umbels of small, pale blue flowers are extremely pretty, and about three inches across. It is a native of New Holland, and was introduced in 1827.

Silene Armeria is a common European weed, but very decorative in our gardens notwithstanding. It is of erect habit, about eighteen inches high, branching profusely. The opposite, glaucous leaves are very smooth, of ovate-lanceolate outline, and rather pleasing to the eye. The large corymbose inflorescence is composed of showy pink blossoms, which are half an inch in diameter and produced in great abundance. S. Armeria alba is an excellent white-flowered variety, though hardly so ornamental as the species. The two plants are deserving of a place in every garden, and it is perhaps worthy of remark that both are said to spread rapidly in this country from self-sown seeds.

Sanvitallia procumbens is a desirable little gem, scarcely more than six inches high. The numerous stems are thickly clad with small ovate leaves, which form a close green ground for the dainty Daisy-like flowers an inch in diameter. The disk is dark purple in color, the ray florets rich golden-yellow and so formed that the entire circle appears to be regularly notched.

With the exception of the Silenes, which appear to give the greatest amount of satisfaction in slightly elevated portions of the rockery, all the plants here mentioned thrive best in the ordinary soil of garden-beds and borders. The seeds should be sown in spring, and placed in a greenhouse or frame where the heat is sufficiently great to exclude frost. The seedlings may be potted singly when large enough to handle easily, and finally planted outside when there is is no further dread of cold weather.

Newton, Mass. *B. M.*

Senecio Japonicus.—Besides hardy plants for border use there is now a large demand for suitable sub-tropical plants as a setting or background for aquatics. Many of these are only half-hardy, requiring to be replanted every year, a process which takes both time and money; consequently, all plants of this character which are hardy, love moisture and have a beauty of their own are worthy of notice.

The giant Groundsel of Japan, Senecio Japonicus, called in some catalogues Erythrochæte palmatifida, is not as well known as it deserves, though it has been in cultivation in the United States for ten years or more. It is, without doubt, hardy, and will thrive in any moist garden-soil. This Senecio is one of the handsomest of the genus, the plant being tall, five feet high, with large, much-divided leaves, each about a foot across, on long stalks from the root. The flower-stems are stout, sometimes much-branched, with large orange-yellow flowers three inches across, much like those of Silphium or single Sunflower, except that they flower in June. Our plants have flowered profusely this summer and are now maturing seed, few of which, however, have power to germinate. When given a proper place, with room to develop its roots within reach of plenty of moisture, S. Japonicus will prove very ornamental, either alone or associated with other plants. It starts very early in spring, and late frosts, which kill the Polygonums, Astilbes and other succulent shoots, have never in our experience injured this Senecio in the least.

South Lancaster, Mass. *O. O.*

Begonia fulgens is a tuberous Bolivian species said to have been discovered in the same locality as B. Baumanni, and, like that species, it is especially interesting for its fragrance. B. fulgens proves to be a plant of dwarf growth with moderate-sized leaves, which above are of a deep emerald-green, with deep veinings of a lighter green, short abundant hairs and a satiny lustre. Underneath, the leaves have strong veins and are stained a vinous red. The leaf-stalks are short, and from these rise numerous pink flower-scapes to a height of, say, twelve inches. These each bear three or four very handsome pure carmine flowers, single, of good substance and five-petaled. The female flowers are in great preponderance. They are fragrant, but not so pronounced in odor as B. Baumanni. The scapes are slightly curved, and the flowers are pendulous. Owing to this habit this plant will not probably meet with much favor with the hybridizers, as the present fashion in Begonias is for rigid flowering-stems, holding the flower face up. But it is a beautiful variety, which will be welcomed by the fanciers of this species, among which are so many very interesting and beautiful plants. At the suggestion of Messieurs Lemoine, who introduced B. fulgens in the fall of 1891, one of the plants has been grown in the border in full

exposure to the sun. But this condition does not seem as favorable as the protection of a cool greenhouse, where the tuberous Begonias generally find their most satisfactory quarters in an average season in this latitude. Growers who have had much experience with this section of Begonias must be convinced that the plants require certain conditions for their welfare, and sometimes need careful attention, which can best be supplied in this climate of sudden changes when the plants have a certain measure of protection and are under some control.

Primula obconica grandiflora is the tempting name under which a French nurseryman offered, this season, the seed of a new Primula, said to be a hybrid between P. obconica and P. cortusoides. The claim made for this strain was that the flowers were not only larger, but that they had a wider range of color than in the Obconica type. A large lot of these plants, which are young, but very vigorous, fail to show much mixture of foreign blood with P. obconica. Among the plants are a limited number which show larger flowers than the type, say, an inch in diameter, and these somewhat in the way of P. cortusoides. The colors have about the usual range of mauves. Evidently the strain needs selection, but it is apparent that the best of the seedlings are an improvement on this valuable flower. A good admixture of P. cortusoides blood with P. obconica would apparently be a great gain, as it would probably give a touch of grace to the flowers, and might possibly produce a race which would be fairly hardy, and a hardy Primula of the free-flowering character of P. obconica would be a great gain. Out-of-doors the peculiar irritating quality of the leaves would not be so great a drawback to its culture. The strain under notice has these qualities rather more highly developed than in any seedlings previously grown by me, rendering them almost impossible plants to be grown in close quarters by any one who has a sensitive cuticle.

Aster Candelabra seems to be the most distinct new Aster of the year, and apparently worth cultivating. Usually Aster novelties vary only from the old types in coloring, with occasionally a slight change in form, the latest of which were the beautiful Comets introduced a few years since. This strain varies principally in the habit of the plant, it being much branched at the base with long stems in the way of a candelabra, whence it is happily named. Either for bedding or for cutting, this habit renders it well worth growing, as the plant is less compact than the usual type, and produces not only a less heavy effect, but furnishes more long-stemmed flowers. They are to be had in white, rose and violet, and are with reflexed petals. Asters in this locality are devastated by a large black beetle with an appetite many times larger than himself, and it is only by constant attention and almost hourly hand-picking that one can secure a crop of flowers. These insects are recent arrivals, appearing first some three years ago, before which the Aster crop was as much a thing of course as it is now uncertain.

Elizabeth, N. J. *J. N. G.*

Deforestation in Russia.

THE following article appeared in a recent number of the *Literary Digest*. It was translated from the *Preussische Jahrbücher* for July.

When treating of the Russian famine of 1891-92 in the April number of this magazine, we remarked that this was not to be regarded as a passing incident, but rather as the inauguration of a chronic condition of affairs traceable to unsystematic farming, to the general withdrawal of capital from the land for investment in manufacturing enterprise, under the ægis of a protective tariff, and to the general deforestation of the country, in great part to provide fuel for railroads and protected enterprises. The fatal consequences of this general deforestation are now generally appreciated, the shrunken state of the once noble rivers of the country, and growing aridity of the climate, affording evidence that can neither be overlooked nor gainsaid.

The regions of the mighty rivers, the Don, the Volga and the Dneiper, the great arteries of Russia, were formerly fringed with wide-spreading forests, along their whole upper and middle courses, which sheltered their sources and tributaries from evaporation throughout the year. These forests have now for the most part disappeared. Mile after mile the traveler sees nothing but low scrubs and melancholy stumps in unbroken succession; the "Mother Volga" grows yearly shallower; the steamers find scarcely seven or eight feet of water in mid-stream; and the ferries pursue their snake-like course from bank to bank in search of the ever-shifting channel. The Don, with its tributaries, is choked; the sources of the Dneiper creep downward, and its chief tributary, the once noble Worskla, with a flow of some 220 English miles, is now dry from source to mouth.

The city of Poltawa lies on its banks, and it was at its mouth that the Swedish army surrendered to Peter the Great. This stream, which fertilized a broad region, supporting a numerous population, exists no more—not temporarily run dry, but with all its springs exhausted, so that in future it may be stricken from the map. The Bitjug, another river in the Don region, the upper course has wholly disappeared—valley and bed are filled to the banks with sand and earth. As if by magic, wide, fertile lands are buried under the sands, and whole villages desolated. "There has been," says Wiestnik Jewropy, "an unparalleled revolution of natural conditions, which threatens a great part of the country with the heat and aridity of the Central Asian Steppes. The present condition of our black-earth region is so serious, and its future so dangerous, that it cannot possibly escape the serious attention of the Government, the scientist and the husbandman, to whom the further development of the situation is perhaps a question of life and death."

There is perfect unanimity in attributing the threatening catastrophe to the denudation of the forests. Innumerable factories sprang into existence, and, in the absence of any systematic provision for coal-supply, they were erected in the heart of the forest, and, after having consumed all the available fuel within easy distance, their plant was actually sometimes transferred to fresh fields. Thus originated the system of wholesale destruction, which was liberally furthered by the network of railways built to maintain their communication with the great marts of commerce and provide generally for the transport of produce. For the past forty years thousands of locomotives and factories have been run almost wholly with wood without a thought being given to any provision for reproduction. The extension of the railways afforded an opportunity for extracting colossal fortunes from the "worthless" forests. These were the manufacturers' views also; so the fate of the Russian forests was sealed. "The machines have devoured the woods."

The recently passed law for the protection of the forests has come fifteen, twenty, or twenty-five years too late to avert the destruction of the agricultural region.

And the Government and people of Russia had already been warned. Forty-two years ago—that is, shortly after the famine of 1847-49—we find the following in a letter from the Charkowski Government to the Imperial Society of Economics: "There are now living people who remember when the present limitless expanse of sand-waste along the banks of the Donez was covered with almost impenetrable forest, interspersed with lakes, which have since dried up or are fast drying up. Our region is flat, deforested, and exposed to all winds. The fatal east wind finds no impediment, and brings ruin in its train. This wind will perhaps at no distant date prove fatal. The Grecian colonies went under probably from the same cause. Protect the forest; sow, plant forests, protect them with rigorous laws. The Volga and Don and all the rivers of southern Russia will be silted up and disappear unless the forests be protected."

More fatal even than the drying up of the streams is the cessation of the spring and summer rains. This is the immediate cause of last year's harvest failure, and on it even depends the current year's harvest. There have been local rains, but not nearly enough. This reversal of old conditions has been coming on gradually with the denudation of the forests; and emphatic warnings, as we have seen, have been uttered. The only result has been the appointment of commissions which have done nothing. Remedial measures on a large scale are now contemplated. Are they too late?

Correspondence.

The Violet Disease.

To the Editor of Garden and Forest:

Sir,—The article by Mr. Orpet on Violet disease, on page 381, was of considerable interest to me. In view of the ravages caused by the Violet disease, in a letter written early last spring to the *American Florist*, I specially requested specimens of diseased plants for study at this station. Two shipments were received from a grower in eastern Massachusetts, who supplies the Boston market with Violets, and had in March about five thousand plants in one house. The leaves reached me in good condition, but soon turned brown and wilted away. At times the florist had thought that quite a

share of the disease was caused from the "sling" of the green fly, which did not develop until fall, when heavy dews and warm sunny days occurred. The plants of a neighbor of this Massachusetts grower have also been troubled with Violet disease, but he attributes it to coal-gas. The leaves in the house begin to dry up all around the edges, and finally the whole leaf becomes as dry as a bit of paper, and when a new growth of leaves appears they are affected in the same way. In the specimens of these plants a distinct bacterial disease was found.

We have just received another shipment of plants from Mississippi, from a woman who makes a specialty of growing Violets. The plants sent, she states, were quite healthy one week before shipping, but all at once they looked as if they had been scalded, and in a few hours were in a very badly browned up and wilted condition.

Mr. Orpet states that the Victoria is disease-proof with him, but it is the Victoria that is giving trouble in Mississippi, although Schoenbrunn, Marie Louise, Swanley and a number of other varieties are perfectly healthy.

As the botanical department of this institution is giving attention to certain floricultural problems, among others the diseases of flowering plants, it would be esteemed a special favor if any of the readers of Garden and Forest having diseased Violets would send them to us by express after September 1st, for investigation here. It will be well to dig a little of the soil around the roots, and send them in as nearly the natural condition as possible. We propose to pursue a systematic study of this malady.

Agricultural Experiment Station, Lafayette, Ind. *C. S. Plumb.*

Plants at Dongan Hills.

To the Editor of Garden and Forest:

Sir,—Since my last visit to Farview, Mr. Wm. Tricker has enlarged and increased his water-tanks, and has several noticeable ones, in which the lover of aquatic plants will find many objects of interest. A large tank of Nelumbiums, consisting of young plants of N. speciosum and N. nucifera, was interesting as showing the difference in growth of the two under the same conditions, the former variety being much more free in flower. These flowers in Japan are said to embrace a wide range of color, and it is to be hoped that among the varieties some may be found which flower more freely than any we yet possess. In another tank was a large selection of the leading varieties of Nymphæas grown for seed, and in many cases they had been carefully hybridized. Evidently we shall soon have Nymphæa hybrids to meet all demands for these favorite flowers. In this tank, for convenience, the crowns of the plants were placed just under the surface of the water, and the thriftiness of growth gave striking proof of the value of shallow culture. Mr. Tricker had in flower all the Nymphæas which have been mentioned in your columns, and I also noted in addition N. elegans, a beautiful variety of a medium size, with light blue flowers, apparently borne very freely. Seedlings of N. Zanzibarensis had numerous shadings of the typical blue or purple and some very charming forms with roseate hues. N. Laydekeri, the new Nymphæa, seems to be a wonderful variety in its strange range of colorings. Open on the same plant, at the same time, were flowers, nearly white, faint pink, deep pink and dark rose. Unlike most Nymphæas, the flowers seem to deepen in color as they grow old.

At one side Mr. Tricker was making a plantation of ornamental grasses, Arundos, Eulalias, etc. Among these Eulalia gracillima univittata stands first for grace, though many others are of nobler proportions. The Abyssinian grass (Pennisetum longistylum) made a striking show with its fluffy heads of bloom. Though an annual, it is one of the most valuable and effective of ornamental grasses of moderate height.

When the American florists make up their minds that certain plants are "good things," they cultivate those plants with great unanimity. They have certainly discovered the value and beauty of Crozy's Cannas, and here, as at most important places, was found a selection in a comprehensive variety. I did not note the names of the best kinds, but among them all Madame Crozy seems to be without a peer for finished elegance. The Chrysanthemum, evidently, is becoming a greenhouse-plant, and it must be said that here, as well as at other places, I found the plants under glass rather better than out-of-doors. The competition at the shows is now so close that the growers can no longer afford to take the chances incident to out-of-door cultivation. Nevertheless, the finished products seen in the shows, albeit more pure in color, seem to be lacking in the solidity of bloom found in those grown under more rigorous conditions.

Farview also possesses a private range of glass houses and extensive grounds which are under the able superintendence of Mr. Tricker. Among some elaborate bedding arrangements there was being tried a variety of Sanchezia nobilis, a very bright and effective plant. A good crop of peaches in one of the houses came from Hall's Early, which seems a finely colored decorative variety for dessert, but not high-flavored. A lot of Fig-trees were well set with fruit, and the cultivation here seemed a success, as did also that of Grapes—a small house of Sweetwaters and Black Hamburg showing a heavy crop of well-formed and well-colored bunches. In the plant-houses great use is made of Allamanda Hendersoni, one vine of which covered many square feet of glass and bore hundreds of beautiful yellow flowers. The scarlet Passion-flower seemed to be another favorite seasonable vine. A lot of the new seedling hybrid Streptocarpus were just coming into bloom, and seemed to be interesting plants in leaf and flower. They flower profusely, but one would hesitate to call them handsome, for they lack both the delicacy and the purity of color of other Gesneraceæ. Judging from these seedlings they need careful selection, many of them having blotches and markings of a dull purple, which could only be enjoyed by the color-blind. As they were grown in close proximity to a fine collection of Tydeas, Achimenes and Gloxinias their characteristics were unpleasantly accented. The houses also contain a fine selection of Orchids and foliage-plants, gems among which one inclines to linger, but the description of which is not likely to be of interest. Among the minor features of some of the houses beautifully developed by Mr. Tricker is the decoration under the benches, which is seldom seen so well carried out. Among a groundwork of low-growing trailing plants with variegated foliage were many clumps of fancy leaved Begonias, Marantas, Alocasias, etc., with grasses, while the variegated Pothos covered the posts with its close leaves. Such a feature as this is worth imitating in many other houses, where such spaces are often unsightly and detract very much from the appearance of handsome collections.

Elizabeth, N. J. *G.*

A Pretty Native Vine.

To the Editor of Garden and Forest:

Sir,—The idea is prevalent that all variegated foliage is the result of low vitality or of actual disease in the plant. This may be the rule, but a ramble through our south-western woods would prove it to be a rule to which there are many exceptions, for here may be found several species of native plants clothed with prettily marked or mottled leaves, which, nevertheless, are apparently perfectly healthy and vigorous. One of these, Passiflora lutea, a small, slender-growing vine, with rather broad, obtusely three-lobed leaves scattered alternately along its stem, bears yellowish green flowers, so small as to be quite inconspicuous, yet worth studying, because of their curious fringed crowns and filamentous processes. Its foliage is decidedly pretty, and the graceful vine, with its clinging tendrils, would, if it were a rare exotic instead of a common native, become a great favorite as a basket-plant. Transplanted from the woodland to the foot of the rockery, these vines adapt themselves admirably to their new position, their delicate growth never quite obscuring the rocks over which they climb, yet softening the angularity of the cold, hard stone by their graceful tracery of leaves and tendrils.

In their own habitat there is a marked difference in the leaf-coloring of different individuals of this species. Perhaps one-third of them have no variegation, the leaves being of a uniform dark green. As Gray, in his manual, makes no mention of any leaf-marking in this species, he probably considers the plain-leaved examples the normal type, but in this section of the country the majority show a more or less distinct variegation, ranging from the plants whose leaves show only a few faint dots or splashes of pale green or ash-gray, to specimens whose leaves are heavily marbled with varying shades of green. In a leaf before me, the groundwork is a deep, even green, blocked with gray-green, light green and pale yellow. This leaf was taken from one of the plants at the rockery, where the soil is rich, and there is an exposure to the sun for a part of each day. They seem to deepen in variegation as they grow older and stronger, though this may be the result of a favorable situation. It is a little strange that none of our wild-flower dealers make mention of this Passion-flower, for it has certainly more merit than some upon their lists, and its range is enormous, extending from southern Pennsylvania to Florida, and west to Missouri and Louisiana.

Pineville, Mo. *Lora S. La Mance.*

The Way-side Flowers.

To the Editor of Garden and Forest:

Sir,—I wish to make a plea for the preservation of way-side flowers. In the state of Connecticut, where wild blooms are in such profusion, the eye is delighted to see on every road-side the beauty of shrubs and vines. Each broken bank, with its adjacent rocks, makes a study for the artist, the pretty green and flowering things offering a picturesque foreground to every landscape. The sweet white Honeysuckle perfumes the air, and Wild Roses in great variety smile on the dusty traveler. The yellow Daisy opens its brown eyes to chide the tardy Golden-rod; the red Lilies flame in the fence-corner, yellow and pink and purple Heather have a home here among the Spiræa, the Cowslip and other natives of the soil. The Pond-lily opens its white disk on the waters, and in wet places the Marsh Mallow shows its spreading cups of delicate pink. The variety is endless, and the generous abundance of nature invites us to accept her gifts, though she does not intend they shall be taken with selfish waste.

But it is not only of these that I wish to speak. There are way-side flowers that, wandering from the garden, are flourishing in sunny spots outside. A group of Coreopsis, a Hollyhock, a plantation of Bluebells or Nasturtium often seek to root themselves or to send their winged seeds into the waste places, and become denizens of the soil. There seems an inherent desire on the part of every traveler to gather these way-side wanderers from the garden. Their rarity attracts the eye; the unexpected association with home-joys awakens the desire of possession, and so every bright flower, which, if left to ripen and scatter its seeds, might gladden the hearts of many in coming years, is quickly plucked from the stem, and after a moment of admiration carelessly thrown aside to make way for some new claimant upon the traveler's attention.

The beauty of the road-side is the property of all who pass, and no one has a right to destroy it. Indeed, the highest sense of obligation should impel each one to do everything in his power for the growth of flower and fruit, for the destruction of insect marauders or poisonous plants, but most of all should he leave untouched the fragile wild things that know so well how to take care of themselves when unmolested. And a deeper chord of human fellowship is struck when one reflects that for the quiet homes along the country-roads this wild beauty is often the only poetry of life, and there are those in humble dwellings and amid poor surroundings who value it and regret its loss.

New Paltz, N. Y. *E. S. S.*

Recent Publications.

Le Potager d'un Curieux. By Messieurs Paillieux and D. Bois (second edition, Paris, 1892).

Variety is the great characteristic of man's diet, as it is of man's raiment. Still, to confine our remarks to such articles of food as are derived from the vegetable kingdom only, it is curious to note that the number of fruits and vegetables usually found in the best-stocked market is a mere trifle in comparison with the total produce which might be used as food. Some nations have a much more extensive diet than we have, and a highly competent authority asserts that "one would sooner make a list of vegetable produce left uneaten by Chinamen than enumerate all the articles which they actually eat."

It should not be inferred, however, that no vegetable is worth growing and eating which is not as yet recognized as such in the civilized world. Some plants may want only to be better known or to have some time and care bestowed on their improvement to assume their rightful place in our gardens.

It is to these "unknown, or imperfectly known, vegetables" that Messieurs Paillieux and D. Bois have devoted for the last twenty years a good deal of time and study, collecting, in fact, information sufficient to make up a volume of nearly 600 pages, and of very great interest to botanist, gardener and amateur alike.

The number of vegetables alluded to in this, the second edition of the work, amounts to two hundred. All, of course, are not equally new or equally promising. Some, in fact, may be said to have been known for ages, and to be vanishing away from gardens rather than deserving to be introduced into cultivation. Such are among others: Skirret (Sium Sisarum), which seems to be losing ground every year; Cuba Purslane (Claytonia perfoliata), the Ice-plant (Mesembryanthemum crystallinum), and the Algerian Valerian (Fedia Cornucopiæ).

A good many, again, are plants well known and even largely grown for some other purpose, either economic or ornamental, which may be used as vegetables on an emergency, but of which no one would think as vegetables only. In this class we may include Aponogeton distachyon, Camassia esculenta (the Quamash of the western territories of North America), Amorphophallus Rivieri, Lilium auratum, L. speciosum and L. tigrinum of Japan, Momordica Charantia, Nelumbium speciosum (the Lotus of Egypt and India), Oxalis Deppei, and Portulaca grandiflora, which are very beautiful ornamental plants, but all of them very poor vegetables indeed.

Among the most promising of the plants introduced in the *Potager d'un Curieux* three are especially worthy of notice, namely, Arctium Lappa, var. Japonicum, Soja hispida and Stachys affinis.

Arctium Lappa, var. Japonicum, described also as Lappa major, is simply a variety of the cosmopolitan "Burrs." The fleshy root of the plant grows and swells rapidly in deeply trenched soil; so much so that it can be obtained one inch thick in the space of three months, and yields a vegetable resembling salsify or scorzonera, but of quicker growth, very white and tender, and easily made very palatable by proper cooking.

Soja hispida is a Chinese plant of the order Leguminosæ, which is remarkable for the large proportion of fat and of nitrogenous matter contained in its seeds. It is from the Soja that the Chinese and Japanese manufacture the "vegetable cheese," a highly nutritious paste which can hardly be recognized from cheese made of milk, and the "Shoyou," a condiment of every-day use, which appears to enter largely in the composition of many of the patent "sauces" made in England.

Soja is not very delicate as a fresh vegetable, as the seed, which is the eatable part of the plant, has a very thick and hard skin. But it might be removed before dishing up. The plant is so prolific, so perfectly hardy and disease-resisting, that it would be worth while to devote some time and care to its improvement. Most varieties of the Soja ripen their seeds too late to be of much use in northern Europe, but several of them might be grown easily in North America.

Stachys affinis, otherwise S. tuberifera, first introduced to notice by Monsieur Paillieux, can be said to have attained in Europe the position of a standing vegetable. In France it is fast becoming popular as Stachys, or "Crosnes du Japon," and it is recognized in England as the "Chinese Artichoke." It is a perfectly hardy vegetable, consisting of the fleshy, pearl-white, underground stems of S. affinis. The tubers, although very watery to all appearance and easily crushed between the thumb and fingers, contain a rather high proportion of albuminous and gummy substances, and therefore constitute a not altogether despicable food. The tubers intended for propagation should be kept in sand over winter, planted out in rows or on mounds early in spring and left to themselves, with the exception of occasional weeding all through the season. The tubers are not wholly formed till the vines die off. They will stand any amount of frost if left in the ground, and they are all the more delicate for being pulled up just before cooking.

A good deal of attention is paid by the authors to such plants, or parts of plants, as are well adapted for being pickled in vinegar, so as to introduce some variety in the "pickles," too commonly made exclusively of gherkins, small onions and bits of cauliflower. The West India Gherkin (Cucumis Anguria), the tuberous Nasturtium (Tropœolum tuberosum), the Martynia, the Chinese Artichoke, and last, not least, the Mioga, the unexpanded flower of a sort of Ginger (Amomum Mioga), are specially recommended for pickling.

Many interesting points in this book are necessarily left untouched here, but enough has been said to show that it is a very curious work, stored with quaint facts and suggestive information. It contains the results of many years of careful study and of protracted experiment, and all references to other books or periodicals are most accurately given, by which the utility of the whole is doubled. The authors, too, have done their work in an evidently enthusiastic but entirely disinterested spirit, and in perfect good faith, plainly stating the pro and con in every case. This in itself is no small merit.

Notes.

The beautiful Royal Gardens at Laeken, near Brussels, with their magnificent conservatories, are frequently thrown open freely to the public, and recently 26,460 persons visited them during a single day.

Seven acres of Apricot-orchard in Tulare County, bringing their owner a return of $2,100, and eight acres of Prune-orchard in San Bernardino County, yielding twenty-five tons of fruit,

which brought $50 a ton, or more than $150 per acre, are mentioned in this year's early reports upon the California fruit-crop.

The *Tombstone Epitaph* recently spoke of a garden near Yuma, Arizona, in which are growing twenty-five Date-palms, the largest of which is thirty feet in height and fifteen years old. This and five of the other trees are now in bearing, and some of the bunches of their fruit weigh fifty pounds, and are estimated to contain three thousand dates each.

Much attention was attracted among the visiting florists at the recent convention in Washington, District of Columbia, by the fine specimens of Crape Myrtle (Lagerstrœmia) to be seen in that vicinity. Chief among these was a magnificent plant in the old garden at Mount Vernon, the specimen in question being eighteen feet high, as many in diameter, and covered with large trusses of its lovely pink blossoms.

A correspondent of the *Journal of Horticulture* complains that Salvia patens is not met with as frequently as it once was. This seems to be true for this country also, and yet in late summer and early autumn we know of no plant whose flowers are of so pure and true a blue. It does not produce flowers so abundantly as does the Scarlet Sage, but it is quite as striking in its way among blue flowers as is Salvia splendens among scarlet ones.

At the recent meeting of the American Association for the Advancement of Science, in Rochester, it was resolved, in accordance with the advice of the Committee on Forestry, that such legislation as is contemplated by the bill introduced and reported by Senator Paddock (S. 3,235), which provides for the preservation and practical administration of the public timber domain, deserves commendation; and it was resolved further, that copies of the resolution be sent to the President, the presiding officer of the Senate, and the Speaker of the House of Representatives.

Over 250,000 pounds of beet-sugar have been produced at the Chino factory, in San Bernardino, California, from this year's crop, showing an enormous growth of this industry in the state. Four hundred thousand acres of Beets were planted against 2,700 acres last year. The growers have netted $4.50 a ton, and one man, who bought twenty acres of land and raised fifteen tons to the acre, paid for this land with the first beet-crop. Since a bounty was placed on beet-sugar, the farmers of California have been quick to see the profit in this industry.

Two very fine pans of the Brazilian Hippeastrum reticulatum are in bloom in the greenhouse of H. H. Hunnewell. There are twenty scapes in one and seventeen in the other, averaging five flowers to a scape. This species is nearly evergreen, and is handsome even when out of bloom. The leaves are a very dark green, sharply recurving, with a white stripe down the centre of each leaf. The flowers are borne on stout scapes a foot or more high, about four inches in diameter; segments, unequal, spreading and recurving; color, soft pink, with a deeper-colored reticulation running through the flower, from whence comes its specific name.

The Horticulteur châlonnais, for the benefit of those who may desire to preserve blossoming flowers fresh for several days, says that this end may be obtained by snipping off the tops of their pistils and thus preventing fructification, which hastens the withering of the flower. But it likewise gives a less well-known receipt, which is, that a small incision made in the pedicel of the flower, or near by in the branchlet which bears it, causing the flower to bend a little to one side, will retard development by partially stopping the flow of sap. If this operation is performed just before a bud unfolds, it will open much more slowly and yet lose nothing of its beauty or perfume.

From a recent bulletin from the Florida Experiment Station it seems that while the weight of an orange steadily decreases after it is picked, the specific gravity increases for a while and then falls off—that is, for a period after plucking, the orange becomes more and more compact and afterward it "loosens up," so to speak. The specific gravity of a freshly pulled orange is generally less than unity. It increases for a while, as the drying goes on, and then decreases, the maximum often exceeding unity—that is, an orange which at first would rise in water will after a few days or a week sink and afterward rise again. In making up the scale for honors and medals, weight counts ten points. In view of this fact, it would be manifestly unfair to compare the weights of oranges that have been pulled from trees different lengths of time.

The practice of enclosing grape-clusters and other fruits in bags of paper or of thin woven tissue as a protection against insects and fungi is perhaps more common in some parts of Europe than it is in this country. A contributor to a Belgian horticultural journal recommends, as particularly well adapted for this service, bags of transparent oiled paper such as is used by draughtsmen for making tracings. "The transparence of this paper," he says, "permits the fruits to profit by solar light and heat. Grapes, Peaches and Apricots trained on espaliers in the open air find in them something of the atmosphere of the hot-house. Inside a hot-house they are equally useful, for, being impermeable, they permit that spraying of the vines or trees with insecticides which is now usually abandoned as the fruit begins to develop. And the bloom of fruits grown in these receptacles is exquisitely preserved."

In a recent bulletin from the Cornell Experiment Station on the comparative merits of steam and hot water for greenhouse heating, it is stated that a comparative test conducted there led to the conclusion that under the conditions at the station steam was more economical than hot water, and more satisfactory in every way. While not condemning hot water, Professor Bailey, under whose charge the experiment was made, adds that, in his belief, steam is superior for very large houses where the fall is slight, for most forcing-houses and for all establishments which are likely to be often modified and extended. Steam overcomes obstacles such as elbows, angles and obstructions better than hot water, and it travels faster and farther. It can be varied more quickly than hot water, and yet under proper management it is quite as steady, and requires no more attention. For conservatory purposes, for straight runs and small houses steam is equaled, and possibly, in some instances, surpassed by hot water. In forcing establishments where hot water is used it is most satisfactory when conducted in wrought-iron or gas pipes in essentially the same manner as steam.

Many persons have been enquiring of late why there has been so much delay with regard to the establishment of those small parks in the poorer districts of New York which were provided for by a law passed in 1887. Perhaps there has in some cases been more delay than was absolutely needful; but few people realize how slow are the processes by which city property, in the hands of a great number of owners, can be transferred by condemnation proceedings to the guardianship of the city. The sites for several new small parks were long ago decided upon, and the Commissioners of Estimate and Apportionment have been busily at work in the matter, but have not yet brought it to a conclusion. These proposed pleasure-grounds include Mulberry Bend Park, to create which the notorious crooked street of rookeries will be swept away; a park near St. John's Church; and Corlear's Hook Park, near the East River. But even sooner than for these we may look for Rutgers Park, at Rutgers Slip, and the extension of East River Park. The land in these two cases already belongs to the city; plans for both parks have been considered by the Park Commissioners; $23,000 has recently been appropriated for Rutgers Park, and the work there as well as at East River Park will be begun as soon as the contractors can get to work.

In the Boston *Transcript* the Listener describes a garden which is full of interest as showing how a love of growing things and care for their welfare can find expression in the most sordid surroundings. This little garden, not more than fifteen feet in length by twelve in width, is to be found in Boston in a half-slum street largely inhabited by colored people. It contains in one corner a large Mock Orange, and in the opposite corner another similar shrub. Along one side of the area are many plants of Violets and Lilies-of-the-valley, all in a thrifty condition, while pretty bunches of Oxalis in bloom nestle in all the corners. Along the other side of the area is a row of tall Ascension Lilies, now out of bloom, of course, but telling a story of past magnificence. Massed together in the centre are many fine potted plants in flower. All the space is utilized, and there are several plants and creeping vines whose names the Listener did not know. To crown all, a splendid specimen of Ampelopsis Veitchii ascends the house-wall, spreading right and left over the long brick block, and covering the fronts of the adjoining houses, where it has intertwined itself within the slats of the shutters so that they can never more be closed. It is in such service as this that the luxuriant climber which the Japanese have lent us finds its perfect work, covering and cooling the hot walls of humble dwellings and bringing something of color and brightness into the dull monotonous lives of the toiling poor.